

CLAIMS

1. A scheduling apparatus comprising:
 - a distribution section that distributes a reception power resource set by a superordinate apparatus to a plurality of transmission schemes used in uplink data transmission; and
 - a scheduling section that executes uplink data transmission scheduling in accordance with reception power resources distributed to said plurality of transmission schemes.
2. The scheduling apparatus according to claim 1, wherein said distribution section comprises a setting section that sets one reception power resource that is distributed to one transmission scheme of said plurality of transmission schemes to a predetermined value, and sets another reception power resource that is distributed to another transmission scheme to a value obtained by subtracting said predetermined value from the reception power resource set by said superordinate apparatus.
3. The scheduling apparatus according to claim 2, wherein said setting section sets said one reception power resource that is distributed to said one transmission scheme to a maximum value that can be used by said one transmission scheme.

4. The scheduling apparatus according to claim 2,
wherein said setting section sets said one reception power
resources that is distributed to said one transmission
5 scheme to a minimum value that can be used by said one
transmission scheme.

5. The scheduling apparatus according to claim 2,
wherein said setting section sets said one reception power
10 resource that is distributed to said one transmission
scheme within a range from a minimum value to a maximum
value that can be used by said one transmission scheme.

6. The scheduling apparatus according to claim 1,
15 wherein said distribution section comprises a setting
section that sets a reception power resource that is
distributed to at least one transmission scheme of said
plurality of transmission schemes based on a past
scheduling result of said scheduling section.

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7. The scheduling apparatus according to claim 1,
wherein:

 said scheduling section comprises:
 a dedicated scheduling section that executes
25 scheduling corresponding to one transmission scheme of
said plurality of transmission schemes; and
 an acquisition section that acquires a surplus

reception power resource remaining in executed scheduling;

and said distribution section comprises an adding section that adds the acquired surplus reception power resources to another reception power resource that is distributed to another transmission scheme of said plurality of transmission schemes.

8. The scheduling apparatus according to claim 1,
10 wherein said distribution section performs reception power resource distribution based on information reported from a mobile station apparatus indicating an amount of data in said mobile station apparatus or variation of said amount of data.

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9. The scheduling apparatus according to claim 1,
further comprising a selection section that selects,
based on reported information reported from a mobile
station apparatus, at least one transmission scheme to
20 be used by said mobile station apparatus form among said
plurality of transmission schemes;

wherein said distribution section performs
reception power resource distribution in accordance with
a selection result of said selection section.

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10. The scheduling apparatus according to claim 9,
wherein said selection section switches a transmission

scheme of said mobile station apparatus in a previous scheduling result of said scheduling section to another transmission scheme based on said reported information.

5 11. The scheduling apparatus according to claim 9, wherein said selection section decides for each of said plurality of transmission schemes whether or not that transmission scheme should be used by said mobile station apparatus based on said reported information.

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12. A base station comprising the scheduling apparatus according to claim 1.

13. A radio communication system comprising the
15 scheduling apparatus according to claim 1.

14. A base station apparatus comprising:
a decision section that decides, based on information reported from a mobile station apparatus,
20 about a transmission scheme to be used by said mobile station apparatus;

a distribution section that distributes a reception power resource set by a superordinate apparatus to a plurality of transmission schemes used in uplink data
25 transmission based on said reported information and a decision result of said decision section;

a scheduling section that executes uplink data

transmission scheduling in accordance with reception power resources distributed to said plurality of transmission schemes; and

5 a signaling section that signals a decision result of said decision section to said mobile station apparatus.

15. A mobile station apparatus that performs uplink data transmission to a base station apparatus, said mobile station apparatus comprising:

10 a reporting section that reports information relating to said mobile station apparatus to said base station apparatus;

a detection section that detects signaling from said base station apparatus of a transmission scheme decision 15 result based on reported information; and

a transmitting section that performs uplink data transmission using a detected transmission scheme.

16. A scheduling method comprising:

20 a distribution step of distributing a reception power resource set by a superordinate apparatus to a plurality of transmission schemes used in uplink data transmission; and

25 a scheduling step of executing uplink data transmission scheduling in accordance with reception power resources distributed to said plurality of transmission schemes.